AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Cancel claims 1-25 without prejudice or disclaimer in favor of remaining amended claims 26-38 and new claims 39-60, all of which are directed to tunable optical device apparatus and method that generically addresses applicant's disclosed alternative species and thus moots the outstanding restriction requirement:

Claims 1-25 - cancelled.

26. (Currently Amended) A tunable optical ~~filter~~device comprising:

i) a zone plate device for ~~frequency filtering of optical radiation so as to~~delivering optical radiation ~~of a selected frequency~~at a predetermined location, the zone plate device providing a non-rectilinear diffraction grating which diffracts incident radiation onto an optical axis through the device; and

ii) control means for controlling optical performance of the zone plate device ~~to provide said frequency filtering~~,

wherein said control means comprises means to change the refractive index of material of the zone plate device so as to change one or more characteristics of the ~~selected frequency~~optical radiation delivered at said predetermined location.

27. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 26 wherein the control means comprises means to apply an electric field to said material of the zone plate device.

28. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 27 wherein the material of the zone plate device is electro-optic.

29. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 28 wherein the material of the zone plate device comprises strontium barium niobate.

30. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 29 wherein the material of the zone plate device comprises SBN:75.

31. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 26 wherein the zone plate device comprises a piece of said material, the piece of material having zone plate elements on a first facet thereof and said predetermined location coinciding with a second facet thereof.

32. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 31 wherein the dimension of the zone plate device from the first facet to the second facet is at least 200 microns.

33. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 31, wherein the control means comprises electrodes extending from the first facet to the second facet for creating an electric field in the piece of material.

34. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 26 wherein the zone plate device provides amplitude zone plate elements.

35. (Currently Amended) A tunable optical ~~filter according to~~device as in claim 26 wherein the zone plate device provides phase zone plate elements.

36. (Currently Amended) A method of tuning an optical ~~source~~device, which optical ~~source~~device comprises a laser diode optically coupled to a zone plate device for providing wavelength selective optical feedback to the laser diode, wherein the method comprises the step of applying an electric field to material of the zone plate device so as to change its optical performance.

37. (Currently Amended) A method of tuning an optical ~~source according to~~device as in claim 36 wherein the step of applying an electric field to material of the zone plate device changes its optical performance so as to change the wavelength at which the zone plate device forms an image in a predetermined image plane.

38. (Currently Amended) A method of tuning an optical ~~filter~~device, which optical ~~filter~~device comprises a zone plate device for frequency filtering of optical

radiation so as to deliver radiation of a selected frequency at a predetermined location, wherein the method comprises the step of applying an electric field to material of the zone plate device so as to change its optical performance whereby the frequency selected for delivery at the predetermined location is changed.

39. (New) A method of tuning an optical device, which optical device comprises a zone plate device for delivering optical radiation at a predetermined location, wherein the method comprises the step of applying an electric field to material of the zone plate device so as to change its optical performance whereby the intensity of the optical radiation at the predetermined location is changed.

40. (New) A tunable optical device as in claim 26 wherein the control means comprises means to change the refractive index of material of the zone plate device so as to change the wavelength of optical radiation at said predetermined location.

41. (New) A tunable optical device as in claim 26 wherein the control means comprises means to change the refractive index of material of the zone plate device so as to change the intensity of optical radiation at said predetermined location.

42. (New) A tunable optical device as in claim 26, further comprising a semiconductor laser diode and a feedback section for providing wavelength selective feedback to the laser diode wherein the feedback section comprises the zone plate device.

43. (New) A tunable optical device as in claim 42 wherein the zone plate device provides at least part of an external cavity in relation to the laser diode.

44. (New) A tunable optical device as in claim 43 wherein the external cavity is entirely provided in material other than air.

45. (New) A tunable optical device as in claim 43 wherein the zone plate device comprises a piece of material, optically transparent over a range of wavelengths, which, in use, is optically coupled to a facet of the laser diode and transmits optical radiation from the diode to the non-rectilinear diffraction grating.

46. (New) A tunable optical device as in claim 45 wherein the non-rectilinear diffraction grating is constructed as variations in refractive index in material of the zone plate device.

47. (New) A tunable optical device as in claim 45 wherein the non-rectilinear diffraction grating is arranged to image incident radiation, the radiation having a selected wavelength, onto a predetermined image plane.

48. (New) A tunable optical device as in claim 47 wherein the incident radiation is received from an object plane and the object and image planes are coincident.

49. (New) A tunable optical device as in claim 47 wherein the zone plate device is arranged in fixed relation to the image plane.

50. (New) A tunable optical device as in claim 47 wherein the image plane is coincident with a surface of the zone plate device.

51. (New) A tunable optical device as in claim 45 wherein the non-rectilinear diffraction grating is rotationally symmetric.

52. (New) A tunable optical device as in claim 42, further comprising a mode hop control device.

53. (New) A tunable optical device as in claim 52 wherein the mode hop control device comprises a waveguide together with control means for controlling its optical performance.

54. (New) A tunable optical device as in claim 53 wherein the control means comprises electrodes for applying an electric field to material of the waveguide.

55. (New) A tunable optical device as in claim 54 wherein the waveguide is constructed at least in part in electro-optic material and wherein the electrodes are arranged to apply an electric field to the electro-optic material.

56. (New) A tunable optical device as in claim 53 wherein the waveguide is adapted to increase a received spot size of optical radiation for delivery to the zone plate device.

57. (New) A tunable optical device as in claim 56 wherein the waveguide is adiabatically tapered.

58. (New) A tunable optical device as in claim 45 wherein the zone plate device is optically coupled directly to a facet of the laser diode.

59. (New) A tunable optical device as in claim 52 wherein the zone plate device is optically coupled to a facet of the laser diode via the mode hop control device.

60. (New) A tunable optical device as in claim 52 wherein the zone plate device and the mode hop control device are constructed at least in part from a common piece of material.